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IN THE UNITED STATES DISTRICT COURT
DISTRICT OF UTAH, CENTRAL DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

vs.

AARON MICHAEL SHAMO,

Defendant.

Case No. 2:16-cr-00631-DAK

MEMORANDUM IN OPPOSITION TO
DEFENDANT'S MOTION TO EXCLUDE
THE DOLLAR VALUE OF
CRYPTOCURRENCIES

Judge Dale A. Kimball

The United States, by and through Michael Gadd, Special Assistant United States Attorney, urges the Court to deny the defendant's motion to exclude evidence of the dollar value of various cryptocurrencies.¹ Cryptocurrencies are exchanged every day for fiat currencies; current and historical exchange rates are widely available. There is no risk of unfair prejudice in telling the jury the dollar value of cryptocurrencies seized from the defendant's cryptocurrency wallets.

¹ The Defendant's motion is Doc. 202.

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1. STATEMENT OF FACTS

1. The defendant and his co-conspirators manufactured Fentanyl-laced fake Oxycodone and other illicit drugs.
2. The defendant, with help from his co-conspirators, sold those drugs on the Dark Net, including on AlphaBay.
3. Customers paid the defendant with Bitcoin.
- 1.1 Cryptocurrency**
4. Bitcoin is a cryptocurrency.

5. Cryptocurrencies are decentralized digital currencies; cryptocurrencies have no centralized administering authority such as a national bank or the Federal Reserve.

6. Cryptocurrencies are open source and math based; they use a global network of participants to validate transactions, which are recorded on a publicly accessible ledger called the blockchain. The exchange rate of a cryptocurrency follows basic economic principles, such as supply and demand.

7. Bitcoin has been acknowledged by the US Treasury. It can be used to conduct legitimate transactions at businesses in Utah and throughout the world, including, for example, at Overstock.com.

8. Cryptocurrencies are held in digital “wallets.” Wallets are software programs.

9. Cryptocurrencies can be exchanged for fiat currencies, like US Dollars.

10. Cryptocurrency-to-dollar exchanges happen with the aid of an exchanger.

11. Exchangers can be (1) commercial online exchangers; (2) cryptocurrency ATMs or kiosks; or (3) peer-to-peer exchangers.

12. The defendant and his co-conspirators mostly used peer-to-peer exchangers to convert their Bitcoin into US Dollars.

1.2 Engaged in Peer-to-Peer Exchanges

13. The defendant set up Bitcoin-for-US Dollar exchanges frequently. United States proposed Exhibits 14.00, 14.02, 14.03, 14.20, and 14.21 show numerous examples of the defendant setting up peer-to-peer exchanges. Here is an example from proposed exhibit 14.02. The blue texts came from the defendant. The grey responses are from his buyer:

Local User

Sent

3/30/2016 10:07:48 PM

Hey it's airshamu4 from localbitcoins, I'm finally feeling above water, can you meet around 530?

+14356120402

Received

3/30/2016 10:08:59 PM

Yeah I can do that. Give me an address.

Local User

Sent

3/30/2016 10:11:14 PM

Cool, you ok at a public place? Starbucks - 3158 e. 6200 s. Cottonwood heights

+14356120402

Received

3/30/2016 10:13:50 PM

That sounds fine. i'll be there.

+14356120402

Received

3/30/2016 11:07:59 PM

Probably going to be a few minutes late. Dealing with some gnarly traffic right now. Sorry

+14356120402

Received

3/30/2016 11:28:19 PM

Just arrived

Local User

Sent

3/30/2016 11:28:31 PM

2 min away

Local User

Sent

3/30/2016 11:28:37 PM

Sorry traffic got me too

+14356120402

Received

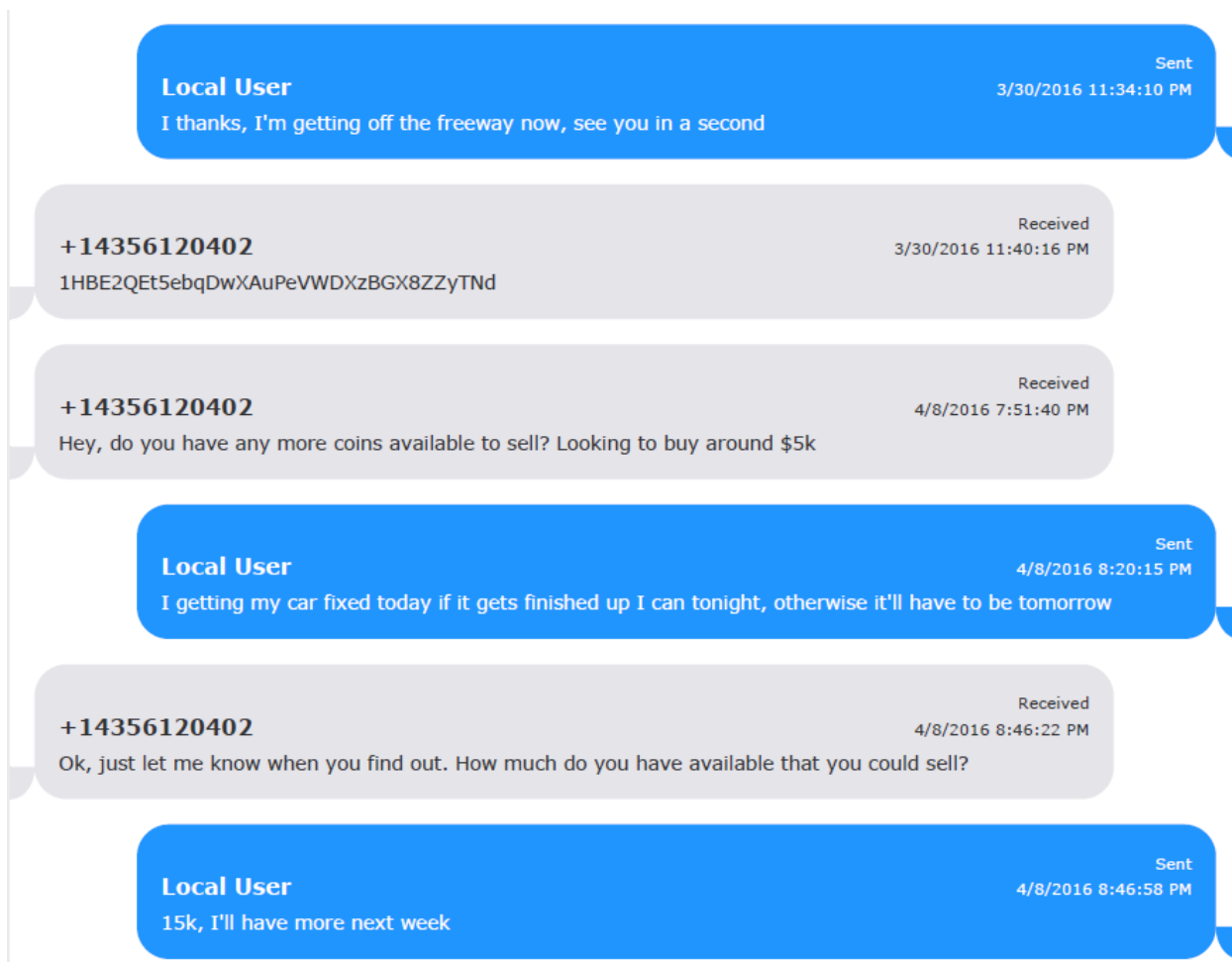
3/30/2016 11:28:54 PM

All good. I'm on the couch.

GOVERNMENT EXHIBIT

14.02

2:16CR 631 DAK



13.1 The defendant starts by identifying himself by the username he used on “Localbitcoins”—a website that connects bitcoin buyers and sellers. Once they meet up to make the trade, the buyer texts his cryptocurrency wallet address to the defendant; the wallet address is the long string of characters that begins with 1HBE2Q. The defendant needed the buyer’s wallet address in order to transfer Bitcoin to the buyer.

13.2 Nine days after their first transaction, the buyer asked the defendant if he could buy “\$5k” of bitcoin from the defendant. The defendant indicated he could sell “15k” worth of Bitcoin to the buyer.

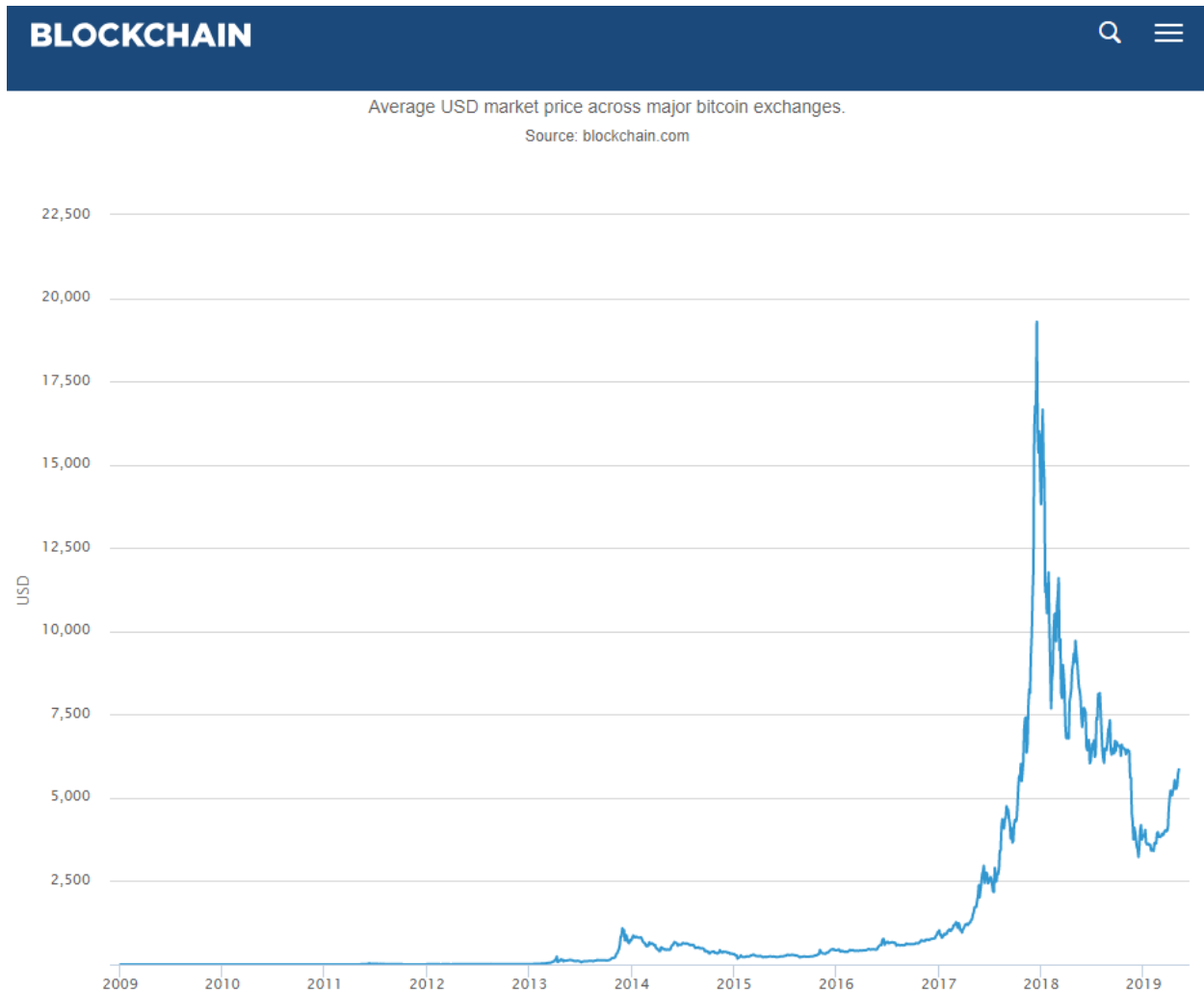
1.3 Present and Historical Values

14. The Bitcoin Blockchain is publicly accessible. For example, it can be accessed online at Blockchain.info (which now redirects to Blockchain.com; (last checked May 8, 2019)).

15. Blockchain.info also shows current and historical dollar values for bitcoin. Here, for example, is a screenshot (captured May 10, 2019) that shows the historical dollar value of bitcoin for the last two years:



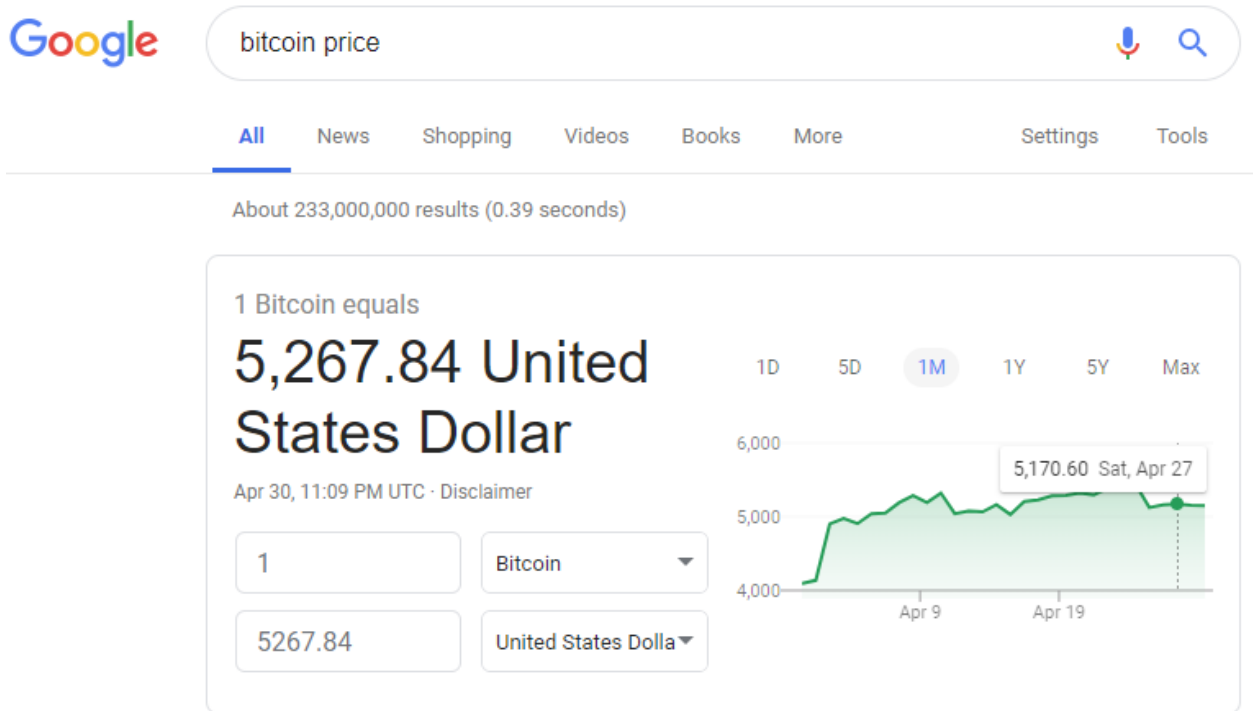
16. Here is a screenshot from Blockchain.info of the historical dollar value of Bitcoin from its inception until the present (captured May 10, 2019):



17. The defendant visited Blockchain.info during the time period covering his criminal conduct, as demonstrated in proposed Exhibit 14.32, which contains a list of URLs the defendant visited.









18. On November 22, 2016, one Bitcoin was worth \$748.75USD (historical value shown on Blockchain.info).

19. A simple google search will reveal the dollar value of various world currencies, including bitcoin (screenshot taken on April 30, 2019):

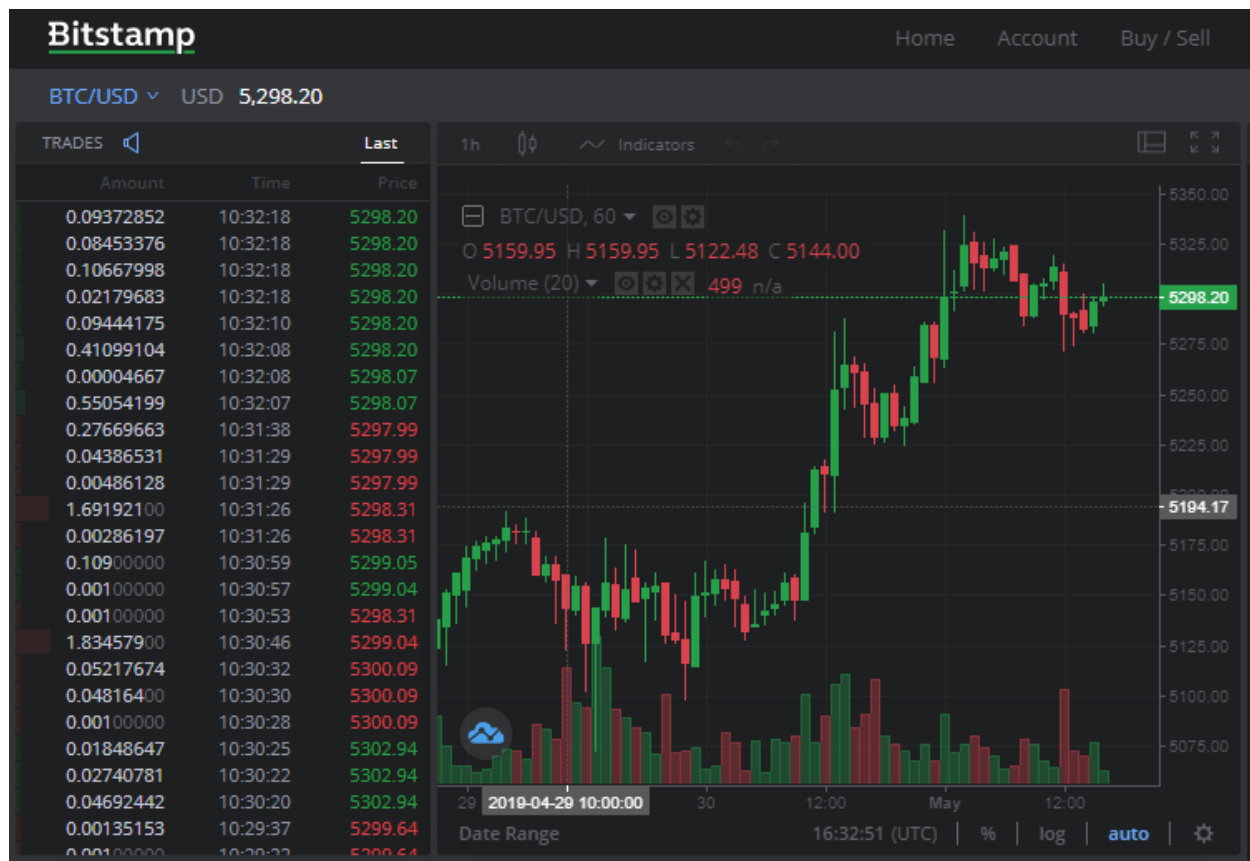


20. Major cryptocurrency exchanges publish current and historical exchange rates. Here is a screenshot from the frontpage of one of those exchanges, Coinbase.com, taken on May 1, 2019. At the time of the screen shot, one Bitcoin was worth \$5,298.51 USD:

coinbase Sign In Get started

1	 Bitcoin BTC	\$5,298.51	+0.97%		Buy
2	 Ethereum ETH	\$158.82	+1.27%		Buy
3	 Bitcoin Cash BCH	\$269.40	+6.11%		Buy
4	 Litecoin LTC	\$72.31	+0.26%		Buy

21. Like Coinbase, Bitstamp.net is a major exchange. Here is a screenshot showing current and historical dollar values for Bitcoin taken May 1, 2019. At the time of the screenshot, one Bitcoin was worth \$5,298.20 USD:



1.4 Defendant's Devices

22. On November 22, 2016, the defendant was arrested at his residence. His residence was searched.

23. Agents seized computers, phones, and other electronic devices from the defendant and his residence.

24. Agents searched those electronic devices for evidence of the defendant's crimes, including evidence of cryptocurrency transactions.

25. Agents collectively spent well over one thousand man-hours searching for the defendant's cryptocurrency wallets and passwords to his wallets. The defendant did not assist agents as they worked to identify, access, and seize his cryptocurrency.

26. Agents eventually gained access to most, but not all, of the defendant's cryptocurrency wallets and seized his cryptocurrency from the wallets to which the agents had access.

27. In total, agents seized approximately 513.15 Bitcoins from the defendant's wallets.

28. Agents also seized similar quantities of two other cryptocurrencies (Bitcoin Cash and Bitcoin Gold) that were created by "forks" in the blockchain.

29. A "fork" is a change to the software of the digital currency network that creates two separate versions of the blockchain with a shared history. In practical terms, after the fork, the next time the software for the defendant's wallets was updated, the wallets held a new cryptocurrency in a quantity equal to the number of Bitcoins in the wallet.

1.5 Auction

30. The United States moved the Court for an order to conduct an interlocutory sale of the defendant's Bitcoin and some other seized assets. The defendant and his co-defendants stipulated to the interlocutory sale.

31. In February 2018, the defendant's 513.15 Bitcoins were auctioned off by the United States Marshal's Service for \$5,357,950.38 USD. The auction yielded a net exchange value of \$10,441.29 USD per Bitcoin.

1.6 Earnings from Drug Trafficking

32. The United States will call an expert witness at trial, Special Agent Guy Gino, to educate the jury on, among other things, cryptocurrency, cryptocurrency wallets, the blockchain, and cryptocurrency exchanges.

33. Special Agent Gino will testify that he reviewed the cryptocurrency found in the defendant's wallets and determined that none of the currency found in the defendant's wallets was created through "Bitcoin Mining"—a legitimate way to "earn" Bitcoin by working to validate transactions as part of the blockchain.

34. United States' proposed Exhibit 16.10 shows wage-data reported to the State of Utah. According to that data, the defendant did not earn legitimate wages after the first quarter of 2015.

35. United States' proposed Exhibit 15.02 is a demonstrative summary of the defendant's AlphaBay transactions for which agents were able to capture data. It shows that the defendant and his co-conspirators earned \$2,817,520.93 USD worth of Bitcoin from their drug sales on AlphaBay. That dollar amount was calculated by taking the US Dollar-to-Bitcoin exchange rate on the date of each of the 5,589 AlphaBay transactions for which agents captured data.

36. Through the investigation, it was determined that none of the 513.15 Bitcoins seized from the defendant's wallets existed in those wallets prior to August 2016.

2 ARGUMENT

The United States urges the Court to deny the defendant's request to exclude references to the dollar value of cryptocurrencies because (1) the present and historical dollar value of Bitcoin is widely known and readily accessible from commercial exchanges; (2) the cryptocurrency seized from the defendant's wallets came solely from illicit activity; (3) revealing the auction price to the jury will not create unfair prejudice against the defendant because exchange rates can be easily explained; (4) unlike in a commercial bank saving or checking account, cryptocurrency wallet software applications do not offer compounding interest to their customers; and (5) even if some of the cryptocurrency in the defendant's wallets was "garnered" by his co-conspirators, the defendant has co-conspirator liability for all of the cryptocurrency found in his wallets.

The defendant cites to evidence rules 104 and 403 as justification for his request. Rule 104 requires the Court to decide preliminary questions, such as whether a witness is qualified, a privilege exists, or evidence is admissible; in so deciding, the Court is not bound by evidence rules, except rules covering legal privileges. Fed. R. Evid. 104(a).

Rule 403 is a rule of inclusion, not of exclusion; the law favors admission of all relevant evidence. *United States v. Watson*, 766 F.3d 1219, 1241 (10th Cir. 2014)(internal citations omitted). The rule carries a strong presumption for admissibility. *United States v. Grant*, 256 F.3d 1146, 1155 (11th Cir. 2001). "Within limits delineated in the Federal Rules of Evidence, the government is entitled to introduce all relevant, probative evidence at its disposal." *United States v. Burgess*, 576 F.3d 1078, 1099 (10th Cir. 2009). Relevant evidence should seldom be excluded; the application of Rule 403 should be "cautious and sparing." *United States v. Naranjo*, 710 F.2d 1465, 1469 (10th Cir. 1983).

Evidence that damages the defendant's case is not evidence constituting unfair prejudice. *United States v. Chalan*, 812 F.2d 1302, 1308 (10th Cir. 1987). Only unfair prejudice, that is, prejudice that suggests a decision on an emotional rather than an evidentiary basis, is prohibited by the rule. *Naranjo; supra; United States v. Nevels*, 490 F.3d 800, 805 (10th Cir. 2007) (internal citations omitted). “In performing the [Rule] 403 balancing, the court should give the evidence its maximum reasonable probative force and its minimum reasonable prejudicial value.” *Nevels*, 490 F.3d at 805.

2.1 The historical dollar value of Bitcoin is widely known and readily accessible.

The defendant argues that the Court does not have enough evidence to find the historical dollar value of Bitcoin presented at trial will be correct. Doc. 202, at 2. This response is the United States’ first opportunity to proffer evidence in that regard. The historical dollar value of Bitcoin is widely known and readily accessible on commercial exchanges. Cryptocurrencies seeking economic acceptance within regulated markets must be able to justify and track their value on market platforms. *Commodity Futures Trading Comm’n v. McDonnell*, 287 F. Supp. 3d 213, 229 (E.D.N.Y. 2018).

Whether by google search or by referencing one of the major commercial exchanges, the present and historical dollar values of Bitcoin can be obtained quite easily, as demonstrated in the statement of facts above. The defendant knows well how to ascertain exchange rates—he repeatedly engaged in transactions where he either obtained Bitcoin for drugs or sold Bitcoin for US Dollars. He visited URLs that contained present and historical exchange rates. The proffered evidence regarding exchange rates should satisfy the Court as it makes its preliminary decisions under Rule 104(a) and Rule 403.

2.2 The cryptocurrency seized from the defendant's wallets came solely from illicit activity.

Contrary to the defendant's assertion, the United States can and has determined that none of the cryptocurrency seized from the defendant came from a legitimate source, such as Bitcoin mining. The defendant had no legitimate wages after the first quarter of 2015. The defendant earned at least \$2.8 million USD worth of Bitcoin from selling controlled substances on AlphaBay. None of the Bitcoin seized from the defendant's wallets were awarded to him for Bitcoin mining—all the Bitcoin came as payment from other wallets.

None of the cryptocurrency seized from the defendant's wallets was received by those wallets prior to the dates alleged in the Indictment. The blockchain—the publicly accessible ledger that contains all the Bitcoin transactions from its creation until the present time—shows when the defendant's Bitcoin was transferred into his wallets. The defendant alleges the United States has not “sought to differentiate between amounts Mr. Shamo had prior to the dates of the allegations...” Doc. 202, at 3.

The defendant did not allege his seized Bitcoin pre-dated the crimes for which he was indicted —just that the United States had not analyzed his accounts to see if his cryptocurrency holdings pre-dated his charged criminal conduct. The defendant cited to no specific authority where a court held exclusion was the appropriate remedy when some of a defendant's drug trafficking proceeds were acquired by that defendant prior to the dates alleged in an Indictment.

But the Court does not have to determine whether exclusion is the correct remedy because the seized Bitcoin was, in fact, acquired by the defendant during the time period when he engaged in his continuing criminal enterprise (Count 1), from June 2015 through November 22, 2016.

Bitcoin, like other currencies, is fungible. Determining the date of deposit for a particular Bitcoin found in a wallet requires the application of one of several accounting methods, such as the first-in-first-out approach, the last-in-last-out approach, or the lowest intermediate balance approach. *See United States v. Banco Cafetero Panama*, 797 F.2d 1154, 1159 (2d Cir.1986). The Tenth Circuit has limited the use of the lowest intermediate balance approach because the approach is an “equitable fiction.” *In re Foster*, 275 F.3d 924, 927 (10th Cir.2001).

Under either a last-in-last-out approach or a first-in-first-out approach, the Bitcoin seized from the defendant was transferred into his wallets during the time period when he engaged in his continuing criminal enterprise. None of the 513.15 Bitcoins seized from the defendant’s wallets existed in those wallets prior to August 2016, more than one year after the time period alleged in Count 1 began and only a few months before the defendant’s arrest.

2.3 Revealing the auction price to the jury will not create unfair prejudice against the defendant because exchange rates can be easily explained.²

The defendant asserts no authority for his claim that informing the jury about the price for which the Marshal’s Service auctioned off the defendant’s 513.15 Bitcoins would have a “significantly prejudicial effect.” *Id.* at 3. The United States has found none.

The correct test under rule 403 is not whether the evidence will have a prejudicial effect, but whether the evidence will create unfair prejudice. *United States v. Chalan*, 812 F.2d 1302,

² The defendant also argued that the “exchange rate amount of the E-currency seized in this matter is the subject of great debate.” Doc. 202, at 3. The United States submits such is not the case. The exchange rate obtained by the Marshal’s Service at the auction was \$10,441.29 USD per Bitcoin. The Marshal’s Service auctioned off 513.15 Bitcoins that agents had seized from the defendant’s wallets. Those facts are not “slight estimation[s]” or, to the United States’ knowledge, the subject of “great debate.” *Id.*

1308 (10th Cir. 1987). Rule 403 is a rule of inclusion, not of exclusion; the law favors admission of all relevant evidence. *Watson*, 766 F.3d at 1241. The rule carries a strong presumption for admissibility. *United States v. Grant*, 256 F.3d 1146, 1155 (11th Cir. 2001).

There is no unfair prejudice in explaining to the jury that because of increases in the value of Bitcoin between the defendant's arrest and the auction, the auction price was \$5,357,950.38 USD and the auction yielded a net exchange rate of \$10,441.29 USD per Bitcoin. The United States also intends on informing the jury that the dollar-to-Bitcoin exchange rate on the date of the defendant's arrest was \$748.75 USD. It will further inform the jury that the 513.15 Bitcoins seized from the defendant were worth approximately \$384,221.06 USD on the date of his arrest. These are facts; these facts do not elicit emotions that override reason. They are not unfairly prejudicial.

2.4 Unlike a commercial bank, cryptocurrency wallet software applications do not offer compounding interest to their customers.

The defendant argued that the United States failed to consider compounding amounts of cryptocurrency in the defendant's wallets and that is another reason why the Court should exclude evidence of the value of the defendant's seized cryptocurrency. Doc. 202, at 3. The defendant cited to no specific authority suggesting exclusion was the appropriate remedy.

Here again, the Court does not have to determine whether exclusion is the correct remedy because the defendant's wallets—software applications—did not offer compounding interest to those who kept their cryptocurrency in the wallets.

Commercial banks and credit unions offer compounding interest on fiat currency kept in bank accounts because the banks and credit unions do not really keep a customer's money in an

account—that money is invested by the bank in loans or other investments. Unlike the U.S. dollar or any other fiat currency, Bitcoin is not backed by a government or other legal institution, it is decentralized and transferred peer-to-peer. Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 Hastings Sci. & Tech. L.J. 159, 162 (2012).

Cryptocurrency wallets hold the actual currency. The software engineers who created the wallets cannot access the wallets without the owner's password. The cryptocurrency stays in the wallet until the owner transfers it. There is no compounding interest for cryptocurrency wallets. The software engineers generally earn their money by charging a small transaction fee for every transfer of cryptocurrency to or from the wallet.

2.5 Even if some of the cryptocurrency in the defendant's wallets was earned by his co-conspirators, the defendant has co-conspirator liability for all of the cryptocurrency found in his wallets.

The defendant is liable for the foreseeable acts of his co-conspirators. The defendant argued that the Court should exclude evidence of the dollar value of his seized cryptocurrency because the United States has not attempted to distinguish amounts of cryptocurrency garnered by co-conspirators. Doc. 202, at 3. The defendant cited to no specific authority suggesting exclusion was the appropriate remedy. Nor did the defendant explain how much of the seized cryptocurrency was, in his view, earned by co-conspirators.

But the Court does not have to determine whether exclusion is the correct remedy because the defendant is liable for the foreseeable acts of his co-conspirators. Under the doctrine of *Pinkerton v. United States*, the criminal act of one coconspirator, if it was committed within the scope of and in furtherance of the conspiracy, can be attributed to another coconspirator for the purpose of holding the latter responsible for the substantive offense, provided that the

criminal act was reasonably foreseeable as a necessary or natural consequence of the conspiracy. 328 U.S. 640, 647-48 (1946); *United States v. Lopez*, 271 F.3d 472, 480 (3d Cir. 2001); *see also United States v. Clark*, 717 F.3d 790, 808-09 (10th Cir. 2013) (holding that defendant guilty of conspiracy to commit securities and wire fraud was properly convicted of money laundering under Pinkerton theory of liability; it was reasonably foreseeable to him that money laundering, and the specific transaction at issue, would be undertaken to further the conspiracy).

Even if the Bitcoins seized from the defendant's wallets were earned by one of his co-conspirators, the defendant is still liable for the crime during which the Bitcoin was earned. All the seized Bitcoin was transferred into the defendant's wallets in the last four months of his very profitable criminal enterprise. Because he is liable for the crime, evidence of proceeds of the crime should not be excluded.

The United States asks the Court to deny the defendant's motion to exclude references to the dollar value of cryptocurrencies for the reasons stated above.

Respectfully submitted this 10th day of May, 2019.

JOHN W. HUBER
United States Attorney

/s/ Michael Gadd
MICHAEL GADD
Special Assistant United States Attorney